

We claim:

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1. A reticle with support material (10) of transparent, optically uniaxial crystal, in which the principal axis (A) of said crystal is substantially perpendicular to the surface of said reticle (1).
  2. A reticle based on  $\text{MgF}_2$  as support material (10), in which principal axis (A) of said  $\text{MgF}_2$  is oriented substantially perpendicular to the surface of said reticle (1).
  3. The reticle according to claim 1, in which said principal axis is oriented perpendicular  $\pm 5^\circ$  to the surface of said reticle (1).
  4. The reticle according to claim 1, further comprising a cooling device (5, 13, 14, 50, 51, 52).
  5. The reticle according to claim 4, in which said cooling device (5, 13, 14, 50, 51, 52) has a flowing fluid (50).
  6. The reticle according to claim 2, in which said principal axis is oriented perpendicular  $\pm 5^\circ$  to the surface of said reticle (1).
  7. The reticle according to claim 2, further comprising a cooling device (5, 13, 14, 50, 51, 52).
  8. An illumination equipment for microlithography comprising:  
an illumination system (2), and  
a reticle (1) with magnesium fluoride as support material (10),
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in which said illumination system (2) provides radially polarized light (20, PL, PR), and said magnesium fluoride is oriented with its crystal principal axis substantially in the direction of the optical axis (A) at said reticle (1).

9. An illumination equipment for microlithography comprising:  
an illumination system (2),  
a reticle (1) with support material (10) of transparent optically uniaxial crystal,  
in which said illumination system (2) provides radially polarized light (20, PL, PR), and said support material (10) is oriented with its principal axis substantially in the direction of the optical axis (A) at said reticle (1).
10. The illumination equipment according to claim 6 or 7 with a reticle according to claim 5.
11. The reticle according to claim 6 or 7, further comprising a fluid cooling system.
12. The reticle according to claim 9, further comprising at least one flat plate (13, 14) arranged parallel at said reticle (1), in which a fluid (50) flows between said reticle (1) and said flat plate (13, 14).
13. The reticle according to claim 10, in which said flat plate (13, 14)

comprises crystal.

14. The reticle according to claim 11, in which said crystal comprises  $\text{CaF}_2$  or  $\text{MgF}_2$ .
15. A pellicle (13, 14) of fluoride crystal.
16. The pellicle (13, 14) according to claim 13 comprising a fluoride selected from the group consisting of  $\text{CaF}_2$ ,  $\text{BaF}_2$ , or  $\text{MgF}_2$ .

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